

**CAMECO RESOURCES**

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January 5, 2018

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40-8964

Mr. Mark Rogaczewski, District 3 Supervisor  
Wyoming Department of Environmental Quality  
Land Quality Division  
2100 West 5th Street  
Sheridan, Wyoming 82801

**December 2017 Excursion Report Summary, Cameco Resources, North Butte ISR Project,  
Permit 632**

Dear Mr. Rogaczewski:

Power Resources, Inc. d/b/a/ Cameco Resources (Cameco) is submitting the December 2017 Monthly Excursion Report Summary for the North Butte ISR Project. Monitor Well NB2M-059 and NB2M-069 were confirmed on excursion November 16, 2017. Monitor Well NB2M-059 exceeded the Upper Control Limits (UCL) in chloride and alkalinity, and Monitor Well NB2M-060 exceeded the UCL's in chloride, alkalinity and conductivity. Verbal notification was made by phone to Luke McMahan, Wyoming Department of Environmental Quality (WDEQ) – Land Quality Division (LQD) District 3, on November 17, 2017, with written notification following in a letter dated November 20, 2017.

Attached please find the sampling data for both Monitor Well NB2M-059 and NB2M-060.

Monitor Well NB2M-059 showed a significant decrease in chloride and alkalinity, below the UCLs, during the previous report period. It is Cameco's practice to continue weekly sampling until three (3) consecutive weekly samples show concentrations below the UCL's. This was achieved with the December 11, 2017 sample. A courtesy email was sent to Luke McMahan, WDEQ-LQD on December 14, 2017 stating that "The normal sampling schedule of twice monthly will resume at Monitor Well NB2M-059."

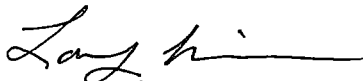
Monitor Well NB2M-060, showed very little change at the beginning of the report period, however, a significant drop in all parameters was seen midway through December. Excursion control efforts will be continued and adjusted as necessary to ensure that concentrations at Monitor Well NB2M-060 continue to reduce. As required by Permit 632, Section 3.3.7.5 states "If an excursion is not controlled within 30 days following confirmation, each effected monitor well will be sampled and analyzed for the parameters in Table OP-10. Additionally, LQD Rules and Regulations Chapter 11, Section 12(d)(i) require that excursion samples be analyzed for antimony, barium, beryllium, conductivity, copper, lead, mercury, nitrate, pH and thallium. The LQD may waive the analysis of specific parameters if, based on historical ground water sampling data, the parameter(s) is not considered likely to occur as a result of ISR activities." A sample

was collected from Monitor Well NB2M-060 on December 18, 2017 and analyzed for baseline parameters. Baseline parameters include all of the constituents listed in Table OP-10, the constituents require by Chapter 11, excluding antimony, beryllium and thallium, and in addition, silica, aluminum and nickel. The analytical results will be provided in the next monthly excursion report.

As noted previously, it is Cameco's practice to continue weekly sampling until three (3) consecutive weekly samples show concentrations below the UCL's. Weekly samples will continue at Monitor Well NB2M-060 until this is achieved, at which time a courtesy email will be sent to LQD stating that the regular sampling schedule will resume.

Please call Victoria Gitthens at (307) 358-6541 ext. 462 or email at Victoria\_Gitthens@cameco.com if you have questions.

Respectfully,



Larry Reimann  
Manager, Compliance & Licensing

LR/vg

Attachment: Monitor Well Reports for NB2M-059 and NB2M-060

cc: File NB 4.3.3.3  
Mr. Doug Mandeville, NRC - CERTIFIED MAIL # 7015 3010 0002 0309 8643  
(Document Control Desk, NRC - CERTIFIED MAIL # 7015 3010 0002 0309 8650 -)

cc: Cameco Distribution

xc: LQD - Cheyenne



**Cameco Resources**  
**North Butte Operation**  
**Monitor Well Report**

*Well Name: NB2M-059*

<i>NRC/WDEQ</i> <i>UCL</i>	<i>Chloride</i> <i>(mg/L)</i>	<i>Alkalinity</i> <i>(mg/L CaCO3)</i>	<i>Conductivity</i> <i>(µMho/cm)</i>	<i>U3O8</i> <i>(mg/L)</i>	<i>Water Elevation</i>
	20.0	105	1732		
12/25/2017	7.0	75	1208		4741.23
12/11/2017	7.0	73	1195	0.10	4742.93
12/04/2017	7.0	73	1111	-0.10	4742.63
11/27/2017	10.0	77	1251	0.10	4741.33
11/20/2017	30.0	150	1553		4750.73
11/16/2017	31.0	165	1611		4770.23
11/14/2017	30.0	157	1546		4769.33
10/24/2017	13.0	64	1240		4773.63
10/11/2017	11.0	73	1242		4772.33
09/25/2017	17.0	91	1345		4759.63
09/13/2017	17.0	92	1369		4787.13
08/23/2017	9.0	43	1171		4775.53
08/08/2017	8.0	34	1156		4782.13
07/25/2017	8.0	35	1104		4775.23
07/11/2017	8.0	51	1073		4776.93
06/20/2017	7.0	48	1089		4779.13
06/06/2017	7.0	53	1090		4778.23
05/23/2017	8.0	41	1162		4775.23
05/08/2017	8.0	36	1116		4770.23
04/24/2017	8.0	46	1115		4772.93
04/12/2017	4.0	50	1137		4775.73
03/21/2017	11.0	36	1146		4788.93
03/07/2017	8.0	28	1140		4788.63
02/22/2017	7.0	34	1106		4790.03



***Cameco Resources  
North Butte Operation  
Monitor Well Report***

***Well Name: NB2M-059***

<b><i>NRC/WDEQ UCL</i></b>	<b><i>Chloride (mg/L)</i></b>	<b><i>Alkalinity (mg/L CaCO3)</i></b>	<b><i>Conductivity (μMho/cm)</i></b>	<b><i>U3O8 (mg/L)</i></b>	<b><i>Water Elevation</i></b>
	20.0	105	1732		
02/08/2017	5.0	49	1090		4788.03
01/24/2017	7.0	56	1146		4792.93
01/11/2017	7.0	60	1151		4786.33



**Cameco Resources**  
**North Butte Operation**  
**Monitor Well Report**

**Well Name: NB2M-060**

<b>NRC/WDEQ UCL</b>	<b>Chloride (mg/L)</b>	<b>Alkalinity (mg/L CaCO3)</b>	<b>Conductivity (μMho/cm)</b>	<b>U3O8 (mg/L)</b>	<b>Water Elevation</b>
	20.0	105	1732		
12/25/2017	22.0	144	1474	0.50	4757.50
12/19/2017	35.0	188	1598	1.00	4755.70
12/11/2017	58.0	258	1999	2.20	4742.40
12/04/2017	58.0	347	2005	3.20	4741.10
11/27/2017	63.0	395	2276	4.60	4747.60
11/20/2017	59.0	406	2205	4.70	4757.20
11/16/2017	61.0	425	2308		4772.30
11/14/2017	62.0	452	2310		4771.20
10/24/2017	19.0	149	1447		4771.70
10/11/2017	9.0	76	1238		4769.80
09/25/2017	7.0	52	1192		4755.30
09/13/2017	7.0	69	1211		4778.60
08/23/2017	8.0	76	1227		4785.40
08/08/2017	8.0	79	1261		4846.00
07/25/2017	8.0	76	1205		4852.20
07/11/2017	8.0	31	1054		4780.40
06/20/2017	7.0	63	1133		4782.80
06/06/2017	7.0	37	1107		4780.90
05/23/2017	7.0	47	1178		4779.80
05/08/2017	6.0	40	1123		4766.80
04/24/2017	7.0	35	1122		4775.10
04/12/2017	7.0	58	1163		4779.90
03/21/2017	6.0	44	1127		4789.00
03/07/2017	7.0	34	1137		4786.50



***Cameco Resources  
North Butte Operation  
Monitor Well Report***

***Well Name: NB2M-060***

<b><i>NRC/WDEQ UCL</i></b>	<b><i>Chloride (mg/L)</i></b>	<b><i>Alkalinity (mg/L CaCO3)</i></b>	<b><i>Conductivity (µMho/cm)</i></b>	<b><i>U3O8 (mg/L)</i></b>	<b><i>Water Elevation</i></b>
	20.0	105	1732		
02/22/2017	7.0	45	1122		4788.20
02/08/2017	7.0	34	1083		4794.40
01/24/2017	7.0	60	1166		4796.00
01/11/2017	6.0	34	1107		4787.60